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EXAMINER	
ADAMS, BRET W	

ART UNIT	PAPER NUMBER
2862	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,097	TAKEI ET AL.	
	Examiner	Art Unit	
	BRET ADAMS	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) *8,9 and 13-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 10-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 April 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to claims filed 4/8/2010.

Response to Arguments

1. Applicant's arguments with respect to claim 1-7 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. It is suggested that a reference to the apparent inventive concept of using magnets and magnetic force detecting sensors to detect lens position.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the base being fixedly mounted in a lens barrel body and the magnetic sensor(s) being mounted on the base (claims 1, 10 and dependents) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered, and the Applicant is advised that changes should reflect only the elected invention.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 1 and 10 are objected to because of the following informalities:

7. Regarding claim 1 line 2, the term "position of a lens on a base" renders the claim indefinite. In elected Figure 5, the base is disclosed as (1003) (see present application PG-Pub paragraph [156]). In that orientation, the term "position of a lens on a base" is clearly understood (where position is the overall position of the lens along the optical axis within the lens barrel). However, the claims disclose that the position detecting magnet or the magnetic force detecting sensor is mounted on the base.

Neither of these orientations is shown in the drawings. Instead, sensor 204 is not depicted in any connection with the base and "floats" in the drawing. Accordingly, when the sensor is mounted on the base as depicted (that is, not mounted to it), "position of the lens on a base" and positional information of said lens on said base loses its significance. For purposes of examination, the examiner has interpreted the term "position of a lens on a base" to refer to the position of a lens within a lens barrel in the optical axis direction, and "the base being fixedly mounted in a lens barrel body" is interpreted broadly to encompass a perpendicular extension from the base on which said sensor or magnet are mounted. This interpretation is in an effort to retain meaningful utility of the sensor to output positional information of the lens in the optical axis direction.

8. The examiner has been unable to locate another depiction of base 1003 that discloses the claimed subject matter.

9. Regarding claim 10, two magnetic force detecting sensors are not depicted in the drawings, and in particular not in the orientation of claim 11, dependent on claim 1, where the two magnetic force detecting sensors are disposed on either side of the magnet.

10. Applicant is advised that any amendments or support for claimed subject matter should be directed only at the elected embodiment.

11. Due to the size of the disclosure, it is respectfully requested that location of applicant's support for amendments be clearly set forth in the response.

12. Appropriate correction is required.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue (US 5220461).

15. Regarding claim 1, Inoue discloses a lens position detecting device for detecting the position of a lens (10) on a base (18) in an optical axis direction (X) (see Figs 2, 5-6), the base being fixedly mounted in a lens barrel body, the device comprising: a position detecting magnet (39) mounted on said lens; a magnetic force detecting sensor (41) mounted on said base, for generating a detected signal having a magnitude depending on the intensity of a magnetic force generated from magnetic poles of said position detecting magnet (see c.7 l.58 through c.8 l.8); and positional information generating means (inherent) for generating positional information of said lens on said base in said optical axis direction based on the magnitude of said detected signal (see Figs 2, 5-6 and c.7 l.54 through c.8 l.8, where position is detected using a hall sensor and magnet and where the voltage level output by the hall sensor is used to determine position, thereby inherently disclosing a "positional information generating means" as there would necessarily need to be processing circuitry to use the hall sensor signal and control position of lens 10).

16. Regarding claim 2, Inoue further discloses wherein said lens is held by a lens holder frame (25), said position detecting magnet is mounted on said lens holder frame, and said magnetic force detecting sensor is mounted on said base (18) (see Fig 6).

17. Regarding claim 3, Inoue further discloses the device further comprising a lens guide mechanism (22,21a) for holding said lens holding frame on said base for movement in said optical axis direction (see Fig 5).

18. Regarding claim 4, Inoue further discloses wherein said position detecting magnet is magnetized in a direction parallel to said optical axis direction (see Figs 2 and 6).

19. Regarding claim 5, Inoue further discloses wherein said magnetic force detecting sensor comprises a Hall device (see c.7 l.58 through c.8 l.8).

20. Regarding claim 6, Inoue further discloses wherein said magnetic force detecting sensor is disposed on a straight line passing through said position detecting magnet parallel to the optical axis of said lens (see Figs 2 and 6).

21. Regarding claim 7, Inoue further discloses wherein said position detecting magnet is mounted on said lens holder frame, and said magnetic force detecting sensor is disposed on a straight line passing through said position detecting magnet parallel to the optical axis of said lens (see Figs 2 and 6).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 1-2, 4-7, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (JP H05-181048, copy and machine translation submitted with IDS filed 9/30/2008).

24. Regarding claim 1, Watanabe teaches a lens position detecting device for detecting the position of a lens (L1) on a base in an optical axis direction (see Fig 1), the device comprising: a position detecting magnet (11a,11b, see translation paragraph [7] and [22] where photosensors 14,15 are contemplated as alternatively being magnetic sensors, and where to fulfill the position detecting function there must be corresponding magnets) mounted on said lens (see Fig 1); a magnetic force detecting sensor (14,15, in view of paragraph [22]) mounted on said base, for generating a detected signal having a magnitude depending on the intensity of a magnetic force generated from magnetic poles of said position detecting magnet (see [7,22-23]); and positional information generating means (inherent) for generating positional information of said lens on said base in said optical axis direction based on the magnitude of said detected signal (see Fig 1, paragraphs [7,22-23] where it is well established that when magnetic sensors are used the position of the magnet is determined based on the magnitude output from the sensor, and in Figure 1 the lens is moved in the optical axis direction). Watanabe does not explicitly teach the base being fixedly mounted in a lens barrel body. It would have been obvious for one having ordinary skill in the art at the time of the invention to mount the magnetic sensor 14,15 of Watanabe on a base, such as a perpendicular protrusion from the lens barrel so that the magnet and sensors would be

on the same plane, that is fixedly mounted to the lens barrel because doing so would ensure that the magnetic sensors would be in proper alignment with the magnets and thereby would ensure most efficient detection of the magnetic force strength.

25. Regarding claim 2, Watanabe further teacheswherein said lens is held by a lens holder frame (11), said position detecting magnet is mounted on said lens holder frame, and said magnetic force detecting sensor is mounted on said base (see Fig 1).

26. Regarding claim 4, Watanabe further teaches wherein said position detecting magnet is magnetized in a direction parallel to said optical axis direction (see Fig 1).

27. Regarding claim 5, Watanabe does not explicitly teach wherein said magnetic force detecting sensor comprises a Hall device or magnetoresistive device. However, Hall devices and magnetoresistive devices are well-known types of magnetic force detection sensors. It would have been obvious for one having ordinary skill in the art at the time of the invention to use a Hall device or magnetoresistive device because doing so would provide predictable results of outputting a signal proportional to the distance of the magnet, thereby enabling position detection.

28. Regarding claim 6, Watanabe further teaches wherein said magnetic force detecting sensor is disposed on a straight line passing through said position detecting magnet parallel to the optical axis of said lens (see Fig 1).

29. Regarding claim 7, Watanabe further teaches wherein said position detecting magnet is mounted on said lens holder frame, and said magnetic force detecting sensor is disposed on a straight line passing through said position detecting magnet parallel to the optical axis of said lens (see Fig 1).

30. Regarding claim 10, Watanabe further teaches wherein said position detecting magnet is mounted on said lens holder frame, and said magnetic force detecting sensor comprises a first magnetic force detecting sensor (14, in view of [22]) and a second magnetic force detecting sensor (15, in view of [22]) and is mounted on said base (see Fig 1).

31. Regarding claim 11, Watanabe further teaches wherein said first magnetic force detecting sensor and said second magnetic force detecting sensor are disposed in respective two locations one on each side of said position detecting magnet (see Fig 1), on a straight line passing through said position detecting magnet parallel to said optical axis (Fig 1).

32. Regarding claim 12, Watanabe further teaches wherein said positional information generating means generates said positional information based on either one of a first detected signal supplied from said first magnetic force detecting sensor and a second detected signal supplied from said second magnetic force detecting sensor (see Fig 1 and description of the operation of position detection means 14,15 in paragraph [7] in view of the sensors 14,15 being magnetic sensors per [22]).

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRET ADAMS whose telephone number is (571)270-5028. The examiner can normally be reached on M-F 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Clayton Laballe can be reached on (571) 272-1594. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Clayton E LaBalle/
Supervisory Patent Examiner, Art Unit 2862

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